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Published in:
Journal of Organizational Behavior

DOI:
[10.1002/job.2375](https://doi.org/10.1002/job.2375)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2019

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):
Kleine, A-K., Zacher, H., & Rudolph, C. W. (2019). Thriving at work: A meta-analysis. Journal of Organizational Behavior, 1-27. <https://doi.org/10.1002/job.2375>

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RESEARCH ARTICLE

Thriving at work: A meta-analysis

Anne-Kathrin Kleine^{1,2}  | Cort W. Rudolph³  | Hannes Zacher¹ ¹ Institute of Psychology, Leipzig University, Leipzig, Germany² Department of Psychology, University of Groningen, Groningen, The Netherlands³ Department of Psychology, Saint Louis University, St. Louis, Missouri, U.S.A.

Correspondence

Anne-Kathrin Kleine, Department of Psychology, University of Groningen, Grote Kruisstraat 2/1, 9712 TS Groningen, The Netherlands.
Email: a.k.kleine@rug.nlHannes Zacher, Institute of Psychology, Leipzig University, Neumarkt 9-19, 04109 Leipzig, Germany.
Email: hannes.zacher@uni-leipzig.de

Summary

Thriving at work refers to a positive psychological state characterized by a joint sense of vitality and learning. On the basis of Spreitzer and colleagues' model, we present a comprehensive meta-analysis of antecedents and outcomes of thriving at work ($K = 73$ independent samples, $N = 21,739$ employees). Results showed that thriving at work is associated with individual characteristics, such as psychological capital ($r_c = .47$), proactive personality ($r_c = .58$), positive affect ($r_c = .52$), and work engagement ($r_c = .64$). Positive associations were also found between thriving at work and relational characteristics, including supportive coworker behavior ($r_c = .42$), supportive leadership behavior ($r_c = .44$), and perceived organizational support ($r_c = .63$). Moreover, thriving at work is related to important employee outcomes, including health-related outcomes such as burnout ($r_c = -.53$), attitudinal outcomes such as commitment ($r_c = .65$), and performance-related outcomes such as task performance ($r_c = .35$). The results of relative weights analyses suggest that thriving exhibits small, albeit incremental predictive validity above and beyond positive affect and work engagement, for task performance, job satisfaction, subjective health, and burnout. Overall, the findings of this meta-analysis support Spreitzer and colleagues' model and underscore the importance of thriving in the work context.

KEYWORDS

learning, meta-analysis, review, thriving, vitality

1 | INTRODUCTION

Human thriving has attracted the interest of social and behavioral scientists for several decades (see D. J. Brown, Arnold, Fletcher, & Standage, 2017, for a review). In the broader psychological literature, thriving is typically conceptualized as a dynamic process of adaptation to physical, psychological, or social adversity, leading to positive outcomes such as personal growth and enhanced functioning (e.g., Bugental, 2004; Jackson, Firtko, & Edenborough, 2007; O'Leary & Ickovics, 1995). Organizational behavior and management researchers focus on a somewhat different meaning of thriving. Specifically,

Spreitzer, Sutcliffe, Dutton, Sonenshein, and Grant (2005) defined thriving at work as a positive psychological state characterized by a joint sense of vitality and learning. More specifically, these researchers suggest that employees who are thriving experience personal growth by feeling energized and alive (i.e., vitality) and by having a sense of continually acquiring and applying knowledge (i.e., learning).

Spreitzer et al. (2005) also developed a theoretical model of thriving at work, which explains how certain individual characteristics (e.g., knowledge and positive affect), interpersonal/relational characteristics (e.g., support and trust), contextual features (e.g., job autonomy and climate of trust), and agentic work behaviors (e.g., task focus and exploration) lead

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to thriving at work. Thriving, in turn, results in positive employee outcomes, including health and development. Within their framework, the researchers assume that thriving at work is not automatically cultivated by simply removing or decreasing the influence of stressors. Instead, they suggest that thriving at work requires increases in favorable individual and relational characteristics and contextual features. Thus, in contrast to traditional conceptualizations in the broader psychological literature that emphasize preceding hardship, Spreitzer et al. (2005) argue that “thriving can occur with or without adversity” (p. 538).

Since Spreitzer et al. (2005) published their model, research on thriving at work has rapidly grown. For instance, empirical studies have shown that thriving is positively related to individual characteristics (e.g., psychological capital; Paterson, Luthans, & Jeung, 2014), relational characteristics (e.g., positive relationships among coworkers; Frazier & Tupper, 2016), and important employee outcomes, such as job performance (Gerbas, Porath, Parker, Spreitzer, & Cross, 2015), job satisfaction (Marchiondo, Cortina, & Kabat-Farr, 2018), and subjective health (e.g., Walumbwa, Muchiri, Misati, Wu, & Meiliani, 2018). This increase in research has been spurred by the development of a two-dimensional measurement instrument to assess thriving at work based on Spreitzer et al.'s (2005) conceptualization (Porath, Spreitzer, Gibson, & Garnett, 2012). Porath et al. (2012) showed that thriving, as measured by their scales, can be distinguished from related constructs such as affect, goal orientation, proactivity, and core self-evaluations. Moreover, they showed that thriving at work predicts important employee outcomes, such as favorable job attitudes, performance, and health.

Although research on thriving at work has accumulated over the past decade, this literature remains scattered and in great need of systematic and theory-based synthesis. We currently lack comprehensive knowledge on the nomological network of thriving at work, including its most important antecedents and consequences, preventing specific and reliable recommendations for future research and organizational practice. The overarching goal of this article, therefore, is to present and discuss the theoretical background, methods, and results of a meta-analysis that quantitatively integrates existing empirical-quantitative studies on

thriving at work. Specifically, we aim to make three significant contributions to organizational behavior research and practice. First, we contribute to a better understanding of the nomological network of thriving at work by synthesizing evidence across studies to identify associations between thriving and both relevant and commonly investigated antecedent and outcome variables guided by Spreitzer et al.'s (2005) model (see Figure 1). Meta-analytic techniques allow us to better estimate the true magnitude of these relationships, as well as—in case of significant variation—to analyze moderating influences (Schmidt & Hunter, 2015). Second, we focus on the thriving construct itself and examine how its two underlying dimensions (i.e., vitality and learning) are related to each other, as well as how certain antecedents and consequences are differentially associated with overall thriving at work and its two dimensions. Third and finally, we contribute to future research and organizational practice by reporting results of meta-analytic regression models regarding the incremental validity of thriving at work for predicting important work outcomes (i.e., task performance, job satisfaction, subjective health, and burnout), above and beyond two conceptually related constructs (i.e., positive affect and work engagement).

2 | THRIVING AT WORK

2.1 | Theoretical background

Spreitzer et al. (2005) define thriving at work as a desirable and positive psychological state in which employees experience both a sense of vitality and learning. Employees who are thriving feel that their current experiences and behaviors at work are intrinsically motivating and supportive of self-development and personal growth. With reference to prior research on affective experiences (Nix, Ryan, Manly, & Deci, 1999), Spreitzer et al. (2005) define the first dimension of thriving, vitality, as the positive feeling of having energy available and feeling “alive.” The second dimension, learning, entails employees' feeling that they are acquiring, and are able to apply, valuable knowledge and skills

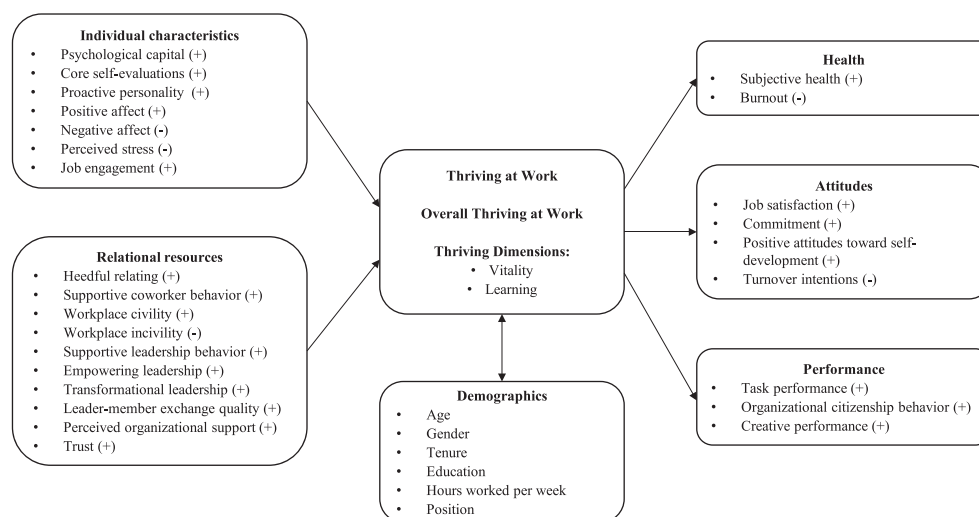


FIGURE 1 Conceptual model and nomological network of assumed antecedents and outcomes of thriving at work

(Spreitzer et al., 2005). A core assumption of thriving at work is that high levels of both vitality and learning need to be present for employees to thrive. Porath et al. (2012) note that “although each dimension can signify some progress toward growth and personal development at work, it is only in concert that they enhance one another to form the experience of thriving” (p. 251).

There are two reasons for defining thriving at work as the joint experience of vitality and learning (Spreitzer et al., 2005). First, affective and cognitive dimensions of psychological experiences are closely intertwined (Eagly & Chaiken, 1993), and thriving is no exception. Second, on the basis of an understanding of well-being as a multidimensional phenomenon with complementary facets, Spreitzer et al. (2005) argued that vitality, as a pleasurable experience, represents the hedonic component of well-being whereas learning, as a means of realizing one's potential, represents the eudaimonic component of well-being (see Ryan & Deci, 2001).

According to Spreitzer et al. (2005), individuals are more likely to thrive when certain enabling conditions are present in the workplace; although not explicitly mentioned by the authors, it can be argued that constraints should likewise be minimized. In their model, Spreitzer and colleagues focus on the proximal contexts in which individuals work and conceptualize “unit contextual features” as important promoters of thriving at work (i.e., a climate of trust and respect, information sharing, and decision-making discretion). The second set of variables assumed to enhance thriving at work includes “resources produced in the doing of work” (i.e., knowledge, positive meaning, positive affect, and relational resources). Unlike contextual features, these characteristics are renewable in that they are endogenously produced through social interactions at work. A third category of predictors in this model is referred to as “agentic work behaviors” (i.e., task focus, exploration, and heedful relating). These behaviors are described as the proximal “engine” of thriving at work, because people acting agentially are more likely to immediately experience both vitality and learning.

Spreitzer et al. (2005) explain that agentic work behaviors are promoted by both unit contextual features and “resources produced in the doing of work.” As people act in agentic ways, they simultaneously produce resources, resulting in a reciprocal link between agentic work behaviors and resources. Spreitzer et al. (2005) conceptualized thriving as both a desirable and an informative experience; individuals are motivated to increase their thriving as well as to use their sense of thriving to gauge whether they are on a positive developmental path. Spreitzer et al. (2005) explicated this assumption in their model by adding a feedback loop of thriving at work to agentic work behaviors. Finally, thriving at work ultimately influences favorable employee outcomes, including positive development and health (Spreitzer et al., 2005).

2.2 | Operationalization

The most widely used measure to assess thriving at work was developed and validated by Porath et al. (2012). To assess vitality, Porath et al. (2012) included five items from Ryan and Frederick's (1997) subjective vitality scale. They define vitality as a psychological state

marked by enthusiasm and spirit (example items: “At work, I feel alive and vital,” “At work, I have energy and spirit,” and “At work, I feel alert and awake;” Porath et al., 2012, p. 256). In their conceptualization of vitality, Ryan and Frederick (1997) referred to self-determination theory (Deci & Ryan, 1985, 2008; Ryan & Deci, 2000a), suggesting that vitality involves a feeling of energy emanating from the self and one's own intentional actions. Ryan and Frederick (1997) report moderate to strong relationships between ratings of vitality and self-determination, self-actualization, mental health, and perceived physical functioning.

Spreitzer et al. (2005), on the basis of models of motivated action (Dweck, 1986; Elliott & Dweck, 1988), define learning as the sense that one is acquiring and can apply valuable knowledge and skills. Porath et al. (2012) argued that no established measure appropriately assessed the subjective experience of momentary learning and that most existing measures gauge learning as a stable personality trait. Therefore, they developed a new set of five items reflecting a momentary sense of learning at work (example items: “At work, I find myself learning often,” “At work, I see myself continually improving,” and “At work, I am developing a lot as a person;” Porath et al., 2012, p. 256). A confirmatory factor analysis showed that the two sets of five items loaded on separate latent vitality and learning factors, which, in turn, loaded on a second-order latent factor representing the higher order construct of thriving at work. Porath et al. (2012) consequently modeled thriving at work as a second-order factor accounting for the shared variance among the two dimensions of vitality and learning.

Alternative but very similar operationalizations of vitality and learning have been developed and validated by Atwater and Carmeli (2009) and Carmeli and Spreitzer (2009), respectively. Finally, some researchers (e.g., Rozkwitalska, 2018; Rozkwitalska & Basinska, 2016) have assessed the learning dimension using items adapted from the learning goal orientation scale by Vandewalle (1997; example item: “I enjoy challenging and difficult tasks at work where I'll learn new skills”). Learning goal orientation is defined as the desire to develop oneself by acquiring skills, improving one's competences, and mastering situations (Vandewalle, 1997). Thus, rather than assessing a momentary sense of learning at work, the learning goal orientation scale serves as a measure of respondents' general desire or motivation to learn.

3 | CONCEPTUAL MODEL AND DEVELOPMENT OF HYPOTHESES

On the basis of Spreitzer et al.'s (2005) model of thriving at work, we conceptually organize the constructs investigated in this meta-analysis into antecedents and outcomes of thriving (see Figure 1). We considered the model by Spreitzer and colleagues as a starting point and adapted it by dividing antecedents of thriving into two categories: individual characteristics (e.g., psychological capital) and relational characteristics (e.g., heedful relating). In contrast to Spreitzer et al. (2005), we conceive contextual features (e.g., trust) also as relational characteristics and not as a separate category. We did not include contextual features other than relational characteristics in our model because we did not identify a sufficient number of studies that assessed such features (e.g., “broad information sharing;” Spreitzer et al., 2005).

We initially included 28 constructs in our conceptual model pre-registered through the Open Science Framework (<https://osf.io/kh3qy/>). However, a meta-analytic review is limited to the relationships that have been consistently studied in a literature (see Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007). Thus, the inclusion of constructs in our final model was primarily guided by these a priori decisions, although some modifications were necessary given the scope of existing empirical studies on thriving at work. Consistent with previous research and best methodological practice, we only included constructs in our meta-analysis that were investigated in three or more independent samples (e.g., Berry, Ones, & Sackett, 2007; King, Dalton, Daily, & Covin, 2004; Rudolph, Katz, Lavigne, & Zacher, 2017). This criterion led to the exclusion of the construct “life satisfaction” in our final model. Furthermore, we initially considered emotional stability as a separate personality-related predictor of thriving at work (Ren, Yunlu, Shaffer, & Fodchuk, 2015). However, on the basis of evidence for substantial interrelations between the subdimensions of “core self-evaluations” (i.e., locus of control, emotional stability, self-esteem, and generalized self-efficacy; Judge, van Vianen, & de Pater, 2004), we decided to consider emotional stability as part of core self-evaluations and not as a separate construct. Thus, our final model includes 26 of the 28 preregistered relationships (see Figure 1).

Individual characteristics include psychological capital, core self-evaluations, proactive personality, positive affect, (low) negative affect, (low) perceived stress, and work engagement. As relational characteristics, we include heedful relating, supportive coworker behavior, workplace civility, (low) workplace incivility, supportive leadership behavior, empowering leadership, transformational leadership, leader-member exchange (LMX), perceived organizational support, and trust. Outcomes of thriving at work are divided into three categories: health-related outcomes, job attitudes, and performance-related outcomes. Specifically, we included subjective health and burnout as health-related outcomes; job satisfaction, commitment, positive attitudes toward self-development, and turnover intentions as attitudinal outcomes; and task performance, organizational citizenship behavior, and creative performance as performance-related outcomes.

We further considered demographic variables that have been studied frequently in relation to thriving at work. As the conceptual links between demographic variables and thriving are weak, we did not preregister any hypotheses concerning these relationships. However, we conducted exploratory analyses of associations of thriving with age, gender, education, tenure, hours worked per week, and position. Finally, it is important to note that most studies we obtained for our meta-analysis used cross-sectional designs. Consequently, the categorization of variables in our model as antecedents or outcomes is derived from theoretical considerations, and we cannot draw causal conclusions based on our analyses.

3.1 | Antecedents of thriving at work

3.1.1 | Individual characteristics

In this section, we explain how psychological capital, core self-evaluations, proactive personality, positive and negative affect,

perceived stress, and work engagement relate to thriving at work (see Figure 1).

Psychological capital is a higher order construct consisting of self-efficacy, optimism, hope, and resilience (Luthans, Youssef, & Avolio, 2007). We argue that employees are more likely to thrive when they have confidence in their ability to master different tasks (self-efficacy), persevere during goal pursuit (hope), make positive attributions about succeeding now and in the future (optimism), and, in face of adversity, bounce back and attain success (resilience). Employees with higher psychological capital should also be more likely to experience learning at work. When facing difficulties and setbacks during their work activities, they will invest greater effort, persist longer, and, thus, learn more and at a higher level than those with lower psychological capital. Indeed, psychological capital has been shown to be positively related to thriving at work (Flinchbaugh, Luth, & Li, 2015; Paterson et al., 2014).

Hypothesis 1. *Psychological capital is positively related to thriving at work.*

Core self-evaluations are a higher order construct composed of self-esteem, generalized self-efficacy, locus of control, and emotional stability (Judge et al., 2004). People with low self-esteem tend to over-generalize negative outcomes or feedback as personal failings, which, subsequently, impedes their vitality and learning (Kernis, Brockner, & Frankel, 1989). When employees possess an internal locus of control—that is, they perceive their actions as autonomous and self-determined—they tend to be more invested, have positive experiences, and, subsequently, feel vital at work (Nix et al., 1999). Moreover, an internal locus of control should promote learning because employees perceive their own actions as caused by internal rather than external forces, which motivates them to acquire new skills and develop competencies that support their development. Finally, emotionally unstable employees are predisposed to experience hopelessness and a lack of energy (Colbert, Mount, Harter, Witt, & Barrick, 2004)—states that can be characterized as the opposite of vitality. Judge and Hurst (2008) found that employees with higher core self-evaluations acquired knowledge and skills faster. Moreover, emotionally stable individuals were found to be more motivated to improve at work through learning than emotionally unstable employees (Naquin & Holton, 2002). Finally, core self-evaluations are positively related to thriving at work (Bensemmane, Ohana, & Stinglhamber, 2018; Porath et al., 2012; Walumbwa et al., 2018).

Hypothesis 2. *Core self-evaluations are positively related to thriving at work.*

Bateman and Crant (1993) define proactive personality as a relatively stable tendency to take action to influence the environment. Proactive individuals are more likely to learn at work as they pursue opportunities for self-improvement, including the acquisition of knowledge, skills, and education (Major, Turner, & Fletcher, 2006). Proactive individuals perceive demands as challenges rather than stressors. Challenges, in turn, stimulate vitality (Greenglass & Fiksenbaum, 2009). Both task- and relationship-oriented proactivity

have been shown to be meaningfully related to vitality (Hahn, Frese, Binnewies, & Schmitt, 2012). Moreover, several studies provide evidence for a positive relationship between proactivity and thriving at work (Jiang, 2017; Mushtaq, Abid, Sarwar, & Ahmed, 2017; Niessen, Sonnentag, & Sach, 2012).

Hypothesis 3. *Proactive personality is positively related to thriving at work.*

According to broaden and build theory, positive emotions are important means to achieve psychological growth and improved well-being (Fredrickson, 2004). Positive affect prompts individuals to engage with their environments and take part in activities that lead them toward enhanced self-development. Individuals experiencing positive affect exhibit an adaptive bias to approach and explore novel objects, people, or situations (Fredrickson, 2001), which consequently should foster their experience of learning at work. According to Porath et al. (2012), positive affect is related to, but distinct from, thriving. They define vitality as a high activation manifestation of positive affect. This is in line with the assumption that vitality forms part of the overall positive affect construct (Nix et al., 1999). Indeed, positive affect has been found to be positively related to vitality (e.g., Ryan & Frederick, 1997; C. Wood, Magnello, & Jewell, 1990). Moreover, there is evidence for a positive link between positive affect and thriving (Novaes, Ferreira, & Gabardo-Martins, 2017; Porath et al., 2012; Taneva & Arnold, 2018).

Hypothesis 4. *Positive affect is positively related to thriving at work.*

People with high negative affect are less likely to experience enthusiasm and excitement, which impedes their experience of vitality (Porath et al., 2012). Negative affect induces self-focus, which, in turn, may result in a weaker inclination to help others, increased self-blame, and unfavorable changes in one's self-image (J. V. Wood, Saltzberg, & Goldsamt, 1990). Thus, people experiencing negative emotional states have the tendency to focus on distress and avoiding negative outcomes, making it more difficult for them to interact with others, explore their surroundings, develop their competencies, and, consequently, learn at work (Ryan & Frederick, 1997). There is also evidence for negative relationships between negative affect and vitality (Ryan & Frederick, 1997) and thriving (Marchiondo et al., 2018).

Hypothesis 5. *Negative affect is negatively related to thriving at work.*

Stressors at work can take on different forms, such as factors intrinsic to the job (e.g., work overload) and one's role in the organization (e.g., ambiguity and conflict; Cooper, 1983). Employees exposed to stressors in their work environment will perceive higher levels of stress and search for ways to cope with the stressors (Decker & Borgen, 1993). This search for coping strategies may consume employees' energy and impact their vitality (Latack & Havlovic, 1992). In addition, perceived stress is likely to discourage employees from acquiring new knowledge and skills (LePine, LePine, & Jackson, 2004), thus diminishing the experience of learning at work. Different

forms of perceived stress, including perceptions of hindrance stressors and role stressors, have been found to be negatively related to thriving (Cullen, Gerbasi, & Chrobot-Mason, 2018; Flinchbaugh et al., 2015; Helfer, 2017).

Hypothesis 6. *Perceived stress is negatively related to thriving at work.*

Work engagement has been defined as a positive, fulfilling, work-related state of mind that is, in addition to dedication and absorption, characterized by feelings of vitality (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Engaged employees have a sense of energetic and affective connection with their work (Bakker, Schaufeli, Leiter, & Taris, 2008) and, consequently, feel alive and vital at the workplace. Work engagement provides ongoing access to goal-directed activities and support that provide individuals with opportunities to learn new things. Consequently, the intensity of engagement in workplace activities has been shown to determine the extent and quality of employees' learning experiences (Billett, 2001).

Hypothesis 7. *Work engagement is positively related to thriving at work.*

3.1.2 | Relational characteristics

In this section, we focus on associations between thriving at work and employees' relationships with their coworkers (i.e., heedful relating, supportive coworker behavior, and civility and incivility), supervisors (i.e., supportive leadership behavior, empowering leadership, transformational leadership, and LMX), and the organization as a whole (i.e., perceived organizational support and trust; see Figure 1).

Heedful interactions are attentive, purposeful, conscientious, and considerate (Weick & Roberts, 1993). They contribute to team effectiveness by increasing employees' ability to work together (Cohen, 1994). As high-quality working relationships are energizing, heedful relating should be linked to vitality (Dutton, 2003; Heaphy & Dutton, 2006). In addition, employees can improve their skills and knowledge through interactions with others (Paterson et al., 2014). Thus, heedful relating should enhance the experience of learning. Indeed, heedful relating has been shown to relate positively to thriving (Abid, Zahra, & Ahmed, 2016; Niessen et al., 2012; Paterson et al., 2014).

Hypothesis 8. *Heedful relating is positively related to thriving at work.*

Supportive coworker behavior not only provides individuals with instrumental benefits and helps them to cope with adversity, it can also support personal growth and development (Colbert, Bono, & Purvanova, 2016) and, consequently, serve as a source of vitality (Dutton & Ragins, 2007). Supportive coworker relationships also serve as an enabling structure and encouraging condition for acquiring new knowledge and skills at work (Carmeli, Brueller, & Dutton, 2009). Indeed, there is evidence for a positive relationship between

supportive coworker behavior and thriving at work (Frazier & Tupper, 2016; Niessen et al., 2012).

Hypothesis 9. *Supportive coworker behavior is positively related to thriving at work.*

Workplace civility is a positive form of behavior that involves politeness and regard for others, consistent with norms for respect (Andersson & Pearson, 1999). It refers to consideration employees show for each other, the capacity to resolve conflicts, and willingness to be attentive to one another—that is, qualities of supportive social environments (Leiter, Laschinger, Day, & Oore, 2011). Workplace civility contributes to an environment in which employees feel motivated to share information, advice, and support (Porath, Gerbasi, & Schorch, 2015). Thus, workplace civility should contribute to the experience of learning at work. Moreover, civility engenders positive feelings about the self and others (Dutton, 2003). When treated with respect, individuals feel valued and powerful (Porath et al., 2015). Civility should therefore contribute to employees' feelings of vitality. Indeed, workplace civility has been shown to relate positively to thriving at work (Abid, Sajjad, Elahi, Farooqi, & Nisar, 2018; Mushtaq et al., 2017).

Hypothesis 10. *Workplace civility is positively related to thriving at work.*

Whereas some researchers have suggested that workplace civility and incivility are opposite poles on the same continuum (Estes & Wang, 2008), others have treated these constructs as distinct, referring to civility as resource enhancing and incivility as distress inducing (Leiter, Day, Oore, & Spence Laschinger, 2012). Consistent with Leiter et al.'s (2012) arguments, we decided to develop separate hypotheses for civility and incivility. Workplace incivility involves acting rudely, without regard for others, and in violation of norms for respect in social interactions (Andersson & Pearson, 1999). Workplace incivility negatively affects people's health, as well as their job satisfaction and positive affect (Reio & Ghosh, 2009). As cognitive resources are often redirected toward the incident instead of focusing on performing tasks or acquiring new skills (Shapiro, 2013), employees who experience incivility are more likely to experience negative emotions and, thus, are unlikely to feel vital or experience learning at work. Indeed, there is evidence for a negative relation between incivility and thriving (Anjum, Marri, & Khan, 2016; Nawaz, Abid, Arya, Bhatti, & Farooqi, 2018).

Hypothesis 11. *Workplace incivility is negatively related to thriving at work.*

The behavior of supervisors can have a significant influence on employees' attitudes and work behavior (Bakker & Schaufeli, 2008; Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Gilbreath & Karimi, 2012), as well as their physical and psychological health (Gilbreath & Karimi, 2012; Thomas & Ganster, 1995).

Supportive managerial environments contribute to safe work contexts in which employees feel encouraged to take risks (Kahn, 1990) and consequently learn from the experiences they make. Indeed, individuals who feel supported by their supervisors show greater willingness to participate in developmental activities (Maurer & Tarulli,

1994). Moreover, supportive leadership behavior promotes perceived meaningfulness of one's job and quality of work relationships (Kahn, 1990), which, in turn, leads to enhanced feelings of vitality (Berg, Dutton, & Wrzesniewski, 2013). Supportive leaders increase their subordinates' feelings of competence, which, according to self-determination theory, promotes vitality (Tummers, Steijn, Nevicka, & Heerema, 2016). Consistent with these assumptions, research found a positive relation between supportive leadership and thriving at work (Paterson et al., 2014; Russo, Buonocore, Carmeli, & Guo, 2015; Taneva & Arnold, 2018).

Hypothesis 12. *Supportive leadership behavior is positively related to thriving at work.*

Empowering leaders focus on power sharing and granting autonomy to employees with the intent of activating their intrinsic motivation (Harris, Li, Boswell, Zhang, & Xie, 2014). Thus, empowering leaders are more than information sources—they enable self-directed learning (Harris et al., 2014). Empowering leaders provide their followers with the possibility to act autonomously at the workplace and to perceive their work as meaningful (Albrecht & Andreetta, 2011), thus contributing to feelings of vitality. Indeed, empowering leadership has been shown to relate positively to thriving at work (Ali, Lei, Jie, & Rahman, 2018).

Hypothesis 13. *Empowering leadership is positively related to thriving at work.*

Transformational leaders inspire employees to achieve shared goals and develop their own leadership capacity. They help followers grow by responding to their needs and by aligning follower, leader, group, and organizational objectives (Bass & Riggio, 2006). Transformational leaders provide intellectual stimulation, which is necessary to motivate employees to develop themselves by exploring their surroundings and, consequently, increasing their experience of learning (Bass, 1985). Moreover, by acting as a role model and motivating followers with inspiring visions, transformational leaders enhance employees' experience of feeling "alive" and vital at work. Transformational leadership has been shown to promote employees' motivation, morality, and empowerment (Dvir, Eden, Avolio, & Shamir, 2002).

Hypothesis 14. *Transformational leadership is positively related to thriving at work.*

Compared with theories that focus on leadership behavior, LMX is unique in its focus on the dyadic relationship between leader and follower as the level of analysis (Gerstner & Day, 1997). High-quality LMX relationships entail respect, trust, and obligation (Graen & Uhl-Bien, 1995). Employees in high-LMX dyads receive more challenging tasks from their leaders and, thus, should have more opportunities for learning at work. Indeed, Bezuijen, Thierry, van Dam, and van den Berg (2010) showed that high-LMX employees engaged more in learning activities as compared with low-LMX employees. As vitality arises from positive social interactions (Spreitzer et al., 2005), building mutual respect and trust between supervisors and employees contributes to a work climate that fosters employees' vitality at work.

Consistently, J. Li (2015) found evidence for LMX as an antecedent of thriving at work.

Hypothesis 15. *LMX quality is positively related to thriving at work.*

Perceived organizational support refers to employees' beliefs regarding the extent to which the organization values their contributions and cares about their well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Employees with high perceived organizational support find their job more pleasurable, are in a better mood at work, and suffer fewer strain symptoms, such as fatigue or burnout (Rhoades & Eisenberger, 2002). This suggests that perceived organizational support facilitates the experience of vitality. High support implicitly creates obligations within individuals to repay the organization, including contributions to the organization's success that go beyond what is formally required (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Settoon, Bennett, & Liden, 1996). Consequently, employees who feel supported by their organization should be motivated to acquire knowledge and skills to help the organization achieve its goals, leading to increased learning at work. Consistent with these assumptions, research has found a positive relationship between thriving at work and perceived support (Abid, Zahra, & Ahmed, 2015; Riaz, Xu, & Hussain, 2018).

Hypothesis 16. *Perceived organizational support is positively related to thriving at work.*

Trust is described as "the willingness of a party to be vulnerable to the actions of another party, based in the expectation that the other will perform a particular action important to the truster, irrespective of the ability to [...] control the other party" (Mayer, Davis, & Schoorman, 1995, p. 712). Trust at work increases the likelihood of cooperation, information sharing, and acceptance of information (Dirks & Ferrin, 2001), which in turn contributes to experiences of learning (Constant, Kiesler, & Sproull, 1994). Moreover, a psychologically nonthreatening environment has been found to encourage risk taking and divergent thinking, which reinforce exploratory learning (Edmondson, 1999; Kostopoulos & Bozionelos, 2011). Only if they trust their work partners, individuals are able to immerse themselves in their work, become absorbed, and feel energized by it (Kahn, 1990), making trust an important prerequisite of vitality (Terry et al., 2000). Indeed, thriving at work has been shown to be positively related to trust in supervisors (Jaiswal & Dhar, 2017), as well as trust in coworkers (Koçak, 2016).

Hypothesis 17. *Trust is positively related to thriving at work.*

3.2 | Outcomes of thriving at work

3.2.1 | Health

In the following, we focus on health outcomes of thriving at work. Specifically, we propose hypotheses on relationships of thriving at work with subjective health and burnout.

Learning at work promotes economic benefits, such as employability and income, as well as noneconomic factors, including self-efficacy, autonomy, social competence, civic engagement, and a sense of control over one's life—outcomes that, according to Field (2009), are strongly related to employee health. Indeed, learning opportunities have been shown to predict subjective health (Mikkelsen, Saksvik, Eriksen, & Ursin, 1999) and health maintenance (Field, 2009). Employees who experience learning are more likely to report that work affected their mental and physical health positively (Ettner & Grzywacz, 2001). According to Ryan and Frederick (1997), vitality relates to both physical (e.g., illness) and psychological (e.g., fatigue) states. Employees with a sense of vitality have also been shown to be less likely to feel worried and more likely to be mentally healthy (Keyes, 2002). Moreover, feelings of vitality render people more resilient to physical adversity and illness (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Zautra, Johnson, & Davis, 2005). Finally, research has found that thriving at work is positively related to subjective health (Porath et al., 2012; Walumbwa et al., 2018).

Hypothesis 18. *Thriving at work is positively related to subjective health.*

Burnout is characterized as the manifestation of prolonged stress on the job and includes feelings of exhaustion, cynicism, and reduced (Maslach, Schaufeli, & Leiter, 2001). Vitality constitutes a resource that provides employees with the energy necessary to effectively deal with the challenges of their work, resulting in reduced burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Employees who learn at work acquire knowledge to cope with work demands, impeding emotional exhaustion (Stewart & Ruckdeschel, 1998). Indeed, feelings of learning and vitality are assumed to counteract the development of burnout (Spreitzer, Porath, & Gibson, 2012), and thriving at work was shown to relate negatively to burnout (Hildenbrand, Sacramento, & Binnewies, 2018; Niessen, Mäder, Stride, & Jimmieson, 2017).

Hypothesis 19. *Thriving at work is negatively related to burnout.*

3.2.2 | Job attitudes

We now focus on important job attitudes, including job satisfaction, commitment, positive attitudes toward self-development, and turnover intentions. Employee learning is an important means of achieving individual and organizational goals. Individual goals tied to learning include personal achievement and development, recognition and acceptance, and financial reward (Leslie, Aring, & Brand, 1998). Organizational goals tied to learning include worker participation in decision-making and expanding job responsibilities (Fiol & Lyles, 1985). Achieving such goals through workplace learning contributes to employee job satisfaction (e.g., Rowden, 2002). Organizations that prioritize learning, education, and development can positively influence performance and job satisfaction (Chang & Lee, 2007; Rose, Kumar, & Pak, 2009). Individuals who feel energetic and vital when performing their work tasks will likely be more satisfied with their jobs.

Vitality is strongly related to well-being (e.g., Ryan & Frederick, 1997), which, in turn, is associated with job satisfaction (Judge & Klinger, 2008), suggesting a positive relationship between vitality and job satisfaction. Indeed, thriving has been shown to relate positively to job satisfaction (Milosevec, Paterson, & Bass, 2014).

Hypothesis 20. *Thriving at work is positively related to job satisfaction.*

Learning at work is a means of achieving personal development and growth, consequently leading to higher identification with and greater commitment toward the organization and one's own work (Walumbwa, Hartnell, & Oke, 2010). When employees feel vital and energetic at work, they exhibit higher levels of organizational commitment (Walumbwa et al., 2010). In contrast, individuals who are not feeling vital at work have to be economical with their resources and, consequently, will be unlikely to exhibit high levels of commitment. Consistent with these assumptions, research demonstrates positive links between thriving at work and commitment (Porath et al., 2012; Thakur, Bansal, & Stokes, 2016; Walumbwa et al., 2010).

Hypothesis 21. *Thriving at work is positively related to commitment.*

Employees need to constantly seek information to identify skill gaps, to recognize areas to improve their performance, and to keep up with skill requirements and advances in their profession, that is, engage in self-developmental behavior (London & Smither, 1999). Employee self-development is described as one of the key outcomes of thriving at work (Porath et al., 2012; Spreitzer et al., 2005). When people experience learning at work, they are likely motivated to continue and extend that feeling by engaging in developmental activities. For example, when individuals have the sense that they are making progress through learning at work, they are likely to seek out opportunities to acquire additional knowledge and skills to further develop their career. A sense of vitality provides them with the energy necessary to actively engage in developmental activities (Porath et al., 2012). Indeed, thriving at work relates positively to attitudes toward self-development (Paterson et al., 2014).

Hypothesis 22. *Thriving at work is positively related to positive attitudes toward self-development.*

Acquiring new knowledge and skills at work is considered to be highly valuable in terms of human capital development of employees. Therefore, continuous learning and personal growth are important for employees to stay in their organization. Employees who experience learning and simultaneously feel vital and energetic at work likely perceive their work environment as supportive for their self-development and goal pursuit, which consequently enhances their intention to remain in this environment (Cho, Johanson, & Guchait, 2009). Consistent with this, thriving at work has been shown to be negatively related to turnover intentions (Anjum et al., 2016; Ren et al., 2015).

Hypothesis 23. *Thriving at work is negatively related to turnover intentions.*

3.2.3 | Performance-related outcomes

Positive states, such as vitality, build physical, psychological, and social resources that are crucial for task performance (Beal, Weiss, Barros, & MacDermid, 2005; Fredrickson, 2001). Moreover, a state of learning enhances the intellectual capabilities of employees who consequently perform better (Rose et al., 2009). Indeed, links have been found between work-related learning and performance (e.g., Škerlavaj, Štemberger, & Dimovski, 2007). Moreover, several studies provide evidence for a positive relationship between thriving at work and task-related performance (Frazier & Tupper, 2016; Gerbasi et al., 2015; Novaes et al., 2017; Shan, 2016; Taneva & Arnold, 2018; Walumbwa et al., 2018).

Hypothesis 24. *Thriving at work is positively related to task performance.*

Organizational citizenship behavior is defined as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in aggregate promotes the effective functioning of the organization" (Organ, 1988, p. 4). Citizenship behavior requires individuals to use work-related knowledge to engage in prosocial acts that benefit other employees and the organization as a whole (Organ, Podsakoff, & MacKenzie, 2005). Thus, when employees perceive they have accumulated sufficient knowledge and skills through learning, they should feel ready to help others at work, thereby engaging in citizenship behavior. Concerning the relationship between citizenship behavior and vitality, it can be assumed that individuals who feel energized and alive at work are motivated to go above and beyond what is formally expected of them and give back to the organization and coworkers through citizenship behavior (Kabat-Farr & Cortina, 2017). Positive relationships between citizenship behavior and thriving have been demonstrated (Kabat-Farr & Cortina, 2017; Marchiondo et al., 2018).

Hypothesis 25. *Thriving at work is positively related to organizational citizenship behavior.*

Finally, creativity at work is defined as the generation of novel and useful ideas concerning products, procedures, and processes at work (West & Farr, 1989). When individuals are learning, they are in an ideal position to recognize opportunities for improvement and change. Learning requires one to obtain expertise, which, in turn, influences creative behavior (Amabile, 1998). Thus, individual learning sets the stage for creativity at work (Hirst, van Knippenberg, & Zhou, 2009). When individuals develop new knowledge and skills through learning at work, they are likely confident enough to take initiative and move beyond the status quo, try out new things, and generate creative ideas at work. When employees feel vital at work, they have more energy and motivation to explore and implement new work processes. Indeed, positive emotional states, such as vitality, facilitate expansive cognitive thinking and creative problem solving (Bledow, Rosing, & Frese, 2013; Hirt, Levine, McDonald, Melton, & Martin, 1997). Research has found that the amount of arousal, which is inherent in positive affective states such as vitality, explains the link between

affect and creativity (Filipowicz, 2006). Indeed, the experience of vitality at work was found to promote creative performance (Kark & Carmeli, 2009). Moreover, there is evidence for a positive relationship between thriving and creative performance (Carmeli & Spreitzer, 2009; Wallace, Butts, Johnson, Stevens, & Smith, 2016).

Hypothesis 26. *Thriving at work is positively related to creative performance.*

4 | METHOD

4.1 | Inclusion and exclusion criteria

To be included in our meta-analysis, a study had to measure the two dimensions of thriving (i.e., vitality and learning) with the scale developed by Porath et al. (2012) or similar operationalizations (e.g., the learning scale developed by Carmeli & Spreitzer, 2009, and the vitality scale developed by Atwater & Carmeli, 2009). We further included studies that operationalized the learning dimension of thriving in terms of learning goal orientation (e.g., learning goal orientation scale developed by Vandewalle, 1997, and learning items by Sonnentag, 2003). We included two studies that operationalized the vitality dimension with the vigor items of the Utrecht work engagement scale (UWES; Schaufeli, Bakker, & Salanova, 2006; Rozkwitalska, 2018; Rozkwitalska & Basinska, 2016). Although the UWES was developed to measure work engagement, the vigor subscale reflects vitality consistent with Porath et al.'s (2012) operationalization (example items: "At work, I feel bursting with energy" and "At my job, I feel strong and vigorous;" Schaufeli et al., 2006). We only included studies on individual thriving at work. Thus, we excluded studies that report associations with constructs similar to vitality and learning but did not focus on thriving (e.g., Kark & Carmeli, 2009; Salerno, 2009; Schaufeli & Bakker, 2004). This first inclusion criterion led to the exclusion of review articles (e.g., Boyd, 2015; Spreitzer, 2007; Spreitzer, Lam, & Fritz, 2010), studies that measured thriving in nonwork settings (e.g., C. B. Brown, 2009; Sullivan & Willis, 2018; Woo, 2015), studies on collective thriving at work (i.e., thriving in teams; Keister, 2014), and studies with qualitative methodologies (e.g., Conway & Foskey, 2015; Ferrier, 2017; Hackett, 2011; Macera, 2016).

To qualify for inclusion, studies also had to include at least one substantive or demographic variable from our model (see Figure 1). This led to the exclusion of one study that measured none of these relevant antecedent, outcome, or demographic variables (Ahmed & Bashir, 2017). Studies had to report on the relationship between thriving at work and one or more correlates or one of the two dimensions (vitality and learning) and at least one correlate. When studies reported thriving as an overall (i.e., average of vitality and learning) composite score, we coded such relationships directly. When studies reported the relationships between each of the two dimensions and one of the relevant correlates, we computed a composite across the dimension correlations using Schmidt and Hunter's

(2015) composite formulae to represent the overall thriving relationship (please see Section 4.4 for further explanations). To avoid double counting (i.e., to maintain sample independence), we excluded studies in which authors clearly used the same dataset and reported the same correlations in more than one published study, unless different outcomes were clearly considered in both studies (e.g., Abid et al., 2015, 2016, used the same sample; overlapping thriving relationships are thus only coded from one study, i.e., Abid et al., 2015).

4.2 | Literature search

An outline of the literature search process is presented in Figure 2. First, we searched the electronic search engines and databases Google Scholar, Web of Science, EBSCO Host, JSTOR, and ProQuest (in this order) for studies that cited the original paper by Spreitzer et al. (2005) and noted nonredundant articles from each source. Next, we searched all databases mentioned above (except for Google Scholar) for articles that used the keywords "thriving" and "work" and that were published between 2005 and 2018. Third, we searched for pre-press articles via various relevant journal websites (e.g., *Journal of Organizational Behavior*, *Journal of Applied Psychology*, and *Journal of Vocational Behavior*). Fourth, we examined the references from articles identified in the first three steps to locate additional studies. To supplement our initial literature searches, we also cross-referenced conference programs from the Academy of Management (2010–2018). Finally, we sent a call for unpublished studies to professional mailing lists (e.g., AOM OB list and APA Occupational Health Psychology List), and we contacted 45 scholars who research thriving via e-mail to obtain unpublished data, which led to the inclusion of three unpublished datasets. Finally, as part of a revision effort, we searched Google Scholar again in February 2019 and were able to include four additional independent samples to our database that were published since our initial submission.

Our meta-analytic database contains $K = 73$ independent samples, representing $N = 21,739$ employees. Of these samples, $k = 65$ were from published articles, $k = 5$ were from dissertations or master's theses, and $k = 3$ were from unpublished manuscripts. All included articles are marked with an asterisk in the reference list. While coding, we contacted 45 authors who recently published on thriving at work to ask whether they had additional unpublished data on thriving at work. Moreover, we asked 33 of these 45 authors to provide additional clarifying information concerning the studies we had obtained via our literature searched (e.g., the dummy coding pattern of gender, scale reliabilities, and intercorrelations among thriving dimensions to facilitate composite formation). We received unpublished material from three authors (Morandin, Russo, Bergami, & Cutolo, 2018; Prem, 2018; Taneva & Arnold, 2015) and additional clarifying information from eight authors. Sensitivity analyses showed that the inclusion of these 11 additional pieces of information did not substantially affect our results (complete results of this analysis are available in our online appendix: <https://osf.io/kh3qy/>).

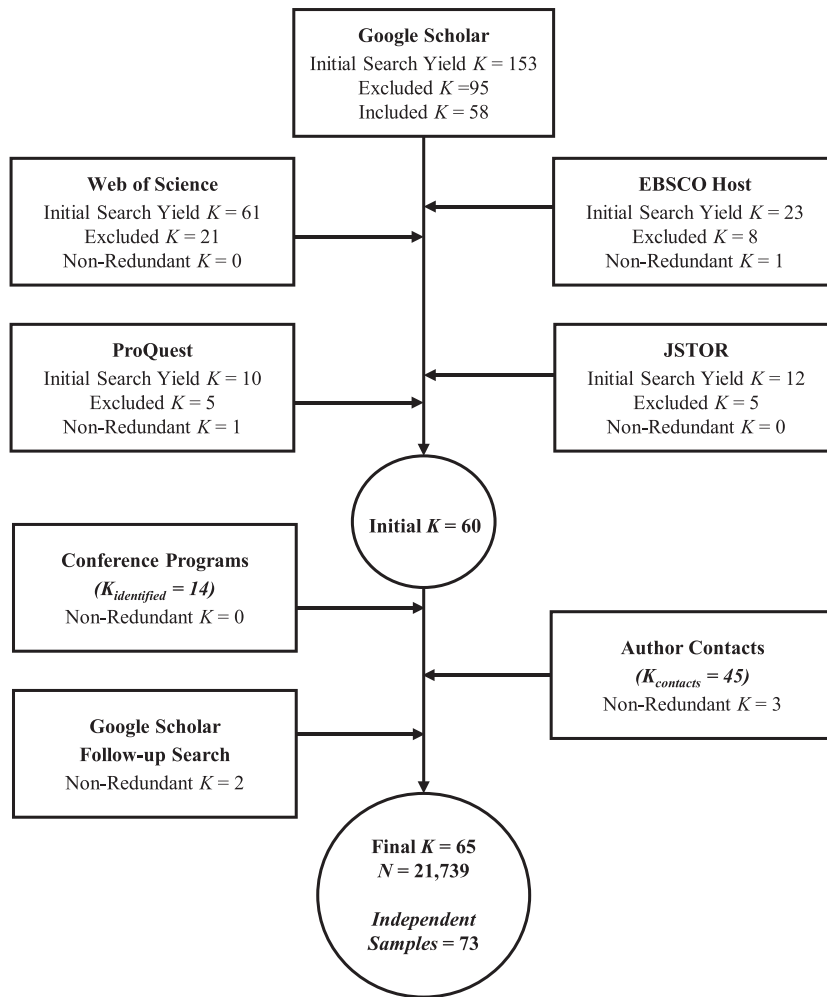


FIGURE 2 Outline of the literature search process. K = number of studies; N = sample size

4.3 | Measures of constructs

4.3.1 | Included relationships

Consistent with past research, we included relationships when they were represented in at least three independent samples (see Berry et al., 2007; Eby, Allen, Evans, Ng, & DuBois, 2008; Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnysky, 2002). When overlapping variables were not available in at least three samples, we logically combined them into a typology of 21 synthetic construct groupings, which were established a priori (see Table 1). We did not form synthetic constructs for five of the 26 constructs linked to thriving in our 26 hypotheses (i.e., transformational leadership, LMX, perceived organizational support, subjective health, and organizational citizenship behavior), as these constructs were consistently labeled across studies. The remaining 21 constructs shown in Table 1 are represented by synthetic construct groupings. For example, the synthetic construct burnout consists of closely related measures of burnout, emotional exhaustion, and job strain. The average number of studies included across these 26 estimates is approximately $k = 6$. Ultimately, three of the 26 hypothesized relationships (11.54%) reported in our meta-analysis are based on just $k = 3$ studies.

Concerning demographic characteristics, it should be noted that age, tenure, and hours worked per week were conceptualized chronologically (i.e., in years and in hours, respectively). Tenure was considered in terms of either job or organizational tenure, and organizational tenure if both were available. Gender was dummy coded, such that higher values were indicative of females (i.e., 0 = male and 1 = female). For education and position, higher scores indicate higher levels of educational attainment and higher positions within the organization, respectively.

4.4 | Composite and dimension-level thriving at work

For overall thriving at work, relationships were either coded directly from primary studies (i.e., those reporting aggregate thriving scores based on the scores for the vitality and learning scales) or combined from dimension-level relationships using composite formulae from Schmidt and Hunter (2015). The covariance of a variable with a composite is the sum of the covariances of the variable with each of the component measures of the composite; the variance of the composite is the sum of all values in the correlation matrix among the y_i measures (Schmidt & Hunter, 2015). Thus, if we take the study by Niessen et al.

TABLE 1 Summary of synthetic construct groupings

Synthetic construct	Operationalization
Psychological capital	Overall psychological capital Self-efficacy Hope Optimism Resilience
Core self-evaluations	Overall core self-evaluations Emotional stability
Proactive personality	Proactive personality Personal initiative Exploration
Positive affect	Positive affect Happiness at work
Negative affect	Negative affect Pessimism
Perceived stress	Work stress Hindrance stress Role ambiguity Role overload Time pressure
Work engagement	Work engagement Psychological availability
Heedful relating	Heedful relating Connectivity Belongingness
Supportive coworker behavior	Interpersonal citizenship behavior (task focused) Employee helping behavior Sense of belonging Coworker support Relational resources
Workplace civility	Workplace civility Interpersonal citizenship behavior (person focused)
Workplace incivility	Workplace incivility Incivility history
Supportive leadership behavior	Servant leadership Family-supportive behavior Managerial support
Empowering leadership	Empowering leadership Support for growth/mastery Employee involvement climate Generativity Managerial coaching
Trust	Trust to supervisor Trust to colleagues Trust to management Psychological safety
Burnout	Burnout Emotional exhaustion Job strain
Job satisfaction	Job satisfaction Career satisfaction
Commitment	Organizational commitment Team commitment

(Continues)

TABLE 1 (Continued)

	Sense of enrichment/commitment
Positive attitudes toward self-development	Career adaptability Self-development Career development initiative Feedback seeking behavior
Turnover intention	Turnover intention Intention to stay (<i>reverse coded</i>)
Task performance	Task performance Task mastery In-role performance Unit-level performance Meeting expectations
Creative performance	Innovative work behavior Employee creativity

(2012) as an example, the correlation between job tenure and the composite of vitality and learning is the correlation between the sum of the correlation between job tenure and vitality ($r = -.27$) and the correlation between job tenure and learning ($r = .07$), divided by the square root of $n + n(n - 1)$, where n refers to the number of variables considered by the composite (i.e., $n = 2$), multiplied by the correlation between vitality and learning ($r = .36$). Thus, the corresponding formula for this example is

$$r_{XY} = \frac{\sum r_{xy_i}}{\sqrt{n + n(n - 1)r_{y_iy_j}}} = \frac{(-.27 + .07)}{\sqrt{2 + 2(1)(.36)}} = -.12. \quad (1)$$

When available, we additionally coded relationships at the dimension level (i.e., between learning and vitality as separate dimensions of thriving at work and a given correlate).

4.5 | General meta-analytic procedures

Following the literature search, the first author coded the studies in accordance with the a priori developed coding protocol, and the two coauthors conducted regular checks of the coded data. Disagreements were discussed during weekly calibration meetings, until agreement was reached via consensus. In addition, a trained research assistant coded a random sample of 12 of the 63 studies initially obtained (19%; without studies obtained as a result of the follow-up literature search during the revision effort). Interrater agreement was very high for both zero-order correlations (93%) and moderator categories (93%). The few zero-order correlation disagreements were due to misunderstandings of the coding direction (e.g., omitting to reverse sign of the relationship between thriving and gender in cases where a higher dummy code was indicative of males in the respective study). Furthermore, all mistakes based on misunderstandings occurred in the second round of coding, meaning that the coding database that was used in the meta-analysis was correct. All moderator disagreements (e.g., sample type was denoted as

mixed vs. unknown) were reconciled by discussion. None of the disagreements would have had a substantive effect on any of the moderator analyses presented in Section 5.5.

We corrected for sampling and measurement error following random-effects procedures described by Schmidt and Hunter (2015). First, sampling error was corrected for by sample size weighting each correlation in our model. Second, where possible (i.e., for multi-item scales), correlations were corrected for unreliability using the reliability estimates reported for each sample. In cases where reliabilities were not reported, we used artifact distributions to estimate these missing parameters. In the case of demographic variables, such as age or gender, random response error is likely small. In contrast, it is more problematic to assume that measures of variables such as position or tenure are perfectly reliable (Schmidt & Hunter, 1996). However, because determining the reliability of such variables is difficult and reliability estimates were not provided in any of the studies included in the current meta-analysis, we assumed that reliabilities were 1.00 for all demographic variables. Assuming that reliabilities of demographic variables are 1.00 provides conservative estimates of the respective relationships (i.e., assuming reliabilities lower than 1.00 might overestimate these relationships, as the correction for attenuation is greater if the reliability is lower; see Schmidt & Hunter, 2015). This implies that our meta-analytic estimates involving demographic variables have to be interpreted with caution, as they are likely to be downwardly biased (Schmidt & Hunter, 1996).

In addition to the sample size-weighted correlation (r) and the sample size-weighted and reliability-corrected correlation (r_c), we report the 95% confidence interval and the 80% credibility interval for r_c , as well as the variance attributable to statistical artifacts (%Var). A sample size-weighted and reliability-corrected correlation is considered statistically significant when its confidence interval does not include zero. If a credibility interval includes zero, moderators are likely present (Schmidt & Hunter, 2015). Analyses of zero-order relationships were conducted using the “psychometric” package for R (Fletcher, 2015). Follow-up exploratory and sensitivity analyses were conducted using the “metafor” package for R (Viechtbauer, 2010).

5 | RESULTS

5.1 | Relationship between vitality and learning

The meta-analytic corrected intercorrelation between vitality and learning is based on $K = 16$ studies ($N = 4,346$) and suggests that the two dimensions of thriving are positively related to one another ($r = .56$; $SD_{r_c} = 0.03$; $r_c = .65$). Of note, the upper boundaries of the 95% confidence interval (.56 to .73) and the 80% credibility interval (.44 to .85) do not include 1.00, suggesting that these are distinct subdimensions (see Harari, Reaves, & Viswesvaran, 2016; Viswesvaran, Schmidt, & Ones, 2002).

5.2 | Testing the conceptual model of thriving at work

In the following, we report sample size-weighted and reliability-corrected correlations (r_c) that index relationships of thriving and (where possible) vitality and learning with relevant antecedent and outcome variables (see Tables 2 and 3). According to the guidelines proposed by J. Cohen (1988), we classify our reported effects as small ($r_c = .1$), moderate ($r_c = .3$), and large ($r_c = .5$), respectively.

5.3 | Antecedent variables

Results of analyses involving the antecedent variables are presented in Table 2. Consistent with our model, we divided results for the overall correlations between antecedent variables and thriving at work into individual characteristics and relational characteristics.

5.3.1 | Individual characteristics

Psychological capital correlates moderately and positively with thriving at work ($r_c = .47$) and learning ($r_c = .40$), as well as strongly and positively with vitality ($r_c = .56$). Core self-evaluations ($r_c = .50$), proactive personality ($r_c = .58$), and positive affect ($r_c = .52$) each correlate strongly and positively with thriving at work. Negative affect correlates moderately and negatively with thriving ($r_c = -.36$) and vitality ($r_c = -.44$) and is unrelated to learning. Perceived stress also correlates moderately and negatively with thriving ($r_c = -.31$). Work engagement correlates strongly and positively with thriving ($r_c = .64$). These findings support Hypotheses 1 through 7.

5.3.2 | Relational characteristics

Concerning relationships with coworkers, heedful relating correlates strongly and positively ($r_c = .59$), supportive coworker behavior correlates moderately and positively ($r_c = .42$), and workplace civility correlates strongly and positively ($r_c = .54$) with thriving at work. Workplace incivility correlates weakly and negatively with thriving ($r_c = -.22$). Regarding relationships with supervisors, supportive leadership behavior ($r_c = .44$) and empowering leadership ($r_c = .44$) correlate moderately and positively, whereas transformational leadership ($r_c = .29$) correlates weakly and positively with thriving at work. Both LMX ($r_c = .61$) and perceived organizational support ($r_c = .63$) correlate strongly and positively with thriving. Finally, trust correlates moderately and positively with thriving ($r_c = .46$). These findings support Hypotheses 8 through 17.

5.4 | Outcome variables

Results of analyses involving the outcome variables are presented in Table 3. Consistent with our model, we divided results for the overall correlations between outcome variables and thriving at work into three groups: health, job attitudes, and performance-related outcomes.

TABLE 2 Summary of meta-analytic relationships: Antecedents of thriving at work

Antecedent variable	Thriving dimension	K	N	r	r_c	SD_{rc}	CI _L	CI _U	%Var	CV _L	CV _U
Individual characteristics											
Psychological capital	Overall thriving	13	3,985	.40	.47	0.15	.38	.55	13.78	.28	.65
	Vitality	6	1,939	.48	.56	0.03	.51	.61	82.41	.52	.59
	Learning	6	1,939	.35	.40	0.13	.29	.51	17.20	.24	.56
Core self-evaluations	Overall thriving	6	2,142	.43	.50	0.15	.37	.63	13.56	.31	.69
Proactive personality	Overall thriving	6	1,679	.48	.58	0.12	.47	.70	22.18	.42	.74
Positive affect	Overall thriving	5	1,555	.45	.52	0.00	.48	.56	100.0	—	—
Negative affect	Overall thriving	5	1,909	-.31	-.36	0.17	-.52	-.21	9.63	-.58	-.14
	Vitality	3	1,586	-.38	-.44	0.16	-.63	-.25	9.05	-.64	-.24
	Learning	3	1,586	-.20	-.23	0.20	-.47	.00	5.48	-.50	.03
Perceived stress	Overall thriving	5	1,177	-.27	-.31	0.13	-.44	-.18	23.67	-.48	-.15
Work engagement	Overall thriving	8	1,854	.55	.64	0.12	.54	.74	19.95	.48	.80
Relational characteristics											
Heedful relating	Overall thriving	6	945	.52	.59	0.18	.44	.75	13.63	.36	.83
Supportive coworker behavior	Overall thriving	6	1,395	.38	.42	0.01	.37	.47	98.59	.41	.43
Workplace civility	Overall thriving	3	939	.45	.54	0.00	.50	.58	100.0	—	—
Workplace incivility	Overall thriving	5	2,090	-.19	-.22	0.02	-.28	-.17	85.90	-.25	-.19
Supportive leadership behavior	Overall thriving	8	2,354	.39	.44	0.11	.35	.53	20.62	.30	.58
Empowering leadership	Overall thriving	6	1,767	.38	.44	0.15	.31	.57	13.85	.25	.63
Transformational leadership	Overall thriving	4	753	.27	.29	0.16	.12	.46	17.26	.09	.50
Leader-member exchange	Overall thriving	3	1,085	.48	.61	0.06	.51	.71	53.77	.53	.68
Perceived org. support	Overall thriving	8	2,487	.53	.63	0.09	.55	.70	31.26	.51	.74
Trust	Overall thriving	9	2,784	.40	.46	0.17	.34	.57	11.58	.24	.67

Note. K = cumulative number of studies; N = cumulative sample size; r = sample size-weighted correlation; r_c = sample size-weighted and reliability-corrected correlation; SD_{rc} = standard deviation of r_c ; CI_L = lower bound of the 95% confidence interval for r_c ; CI_U = upper bound of 95% confidence interval for r_c ; %Var = variance attributable to statistical artifacts; CV_L = lower bound of the 80% credibility interval for r_c ; CV_U = upper bound of the 80% credibility interval for r_c .

TABLE 3 Summary of meta-analytic relationships: Outcomes of thriving at work

Outcome variable	Thriving dimension	K	N	r	r_c	SD_{rc}	CI _L	CI _U	%Var	CV _L	CV _U
Health											
Subjective health	Overall thriving	3	532	.35	.39	0.00	.36	.43	100.0	—	—
Burnout	Overall thriving	6	1,951	-.47	-.53	0.19	-.69	-.37	6.65	-.78	-.28
Attitudes											
Job satisfaction	Overall thriving	7	2,798	.58	.64	0.18	.50	.78	5.96	.40	.87
Commitment	Overall thriving	8	1,766	.53	.65	0.21	.50	.80	12.43	.38	.91
Positive attitude toward self-development	Overall thriving	5	1,139	.45	.52	0.29	.26	.78	6.67	.15	.89
Turnover intention	Overall thriving	6	1,750	-.25	-.29	0.06	-.36	-.22	58.78	-.36	-.22
Performance											
Task performance	Overall thriving	15	4,894	.29	.35	0.10	.28	.41	31.03	.22	.47
	Vitality	3	1,228	.24	.32	0.02	.24	.40	88.47	.29	.35
	Learning	3	1,228	.24	.31	0.00	.27	.36	100.0	—	—
Organizational citizenship behavior	Overall thriving	6	1,975	.39	.43	0.11	.33	.53	19.22	.29	.57
Creative performance	Overall thriving	6	2,054	.52	.58	0.16	.45	.71	9.75	.38	.78

Note. K = cumulative number of studies; N = cumulative sample size; r = sample size-weighted correlation; r_c = sample size-weighted and reliability-corrected correlation; SD_{rc} = standard deviation of r_c ; CI_L = lower bound of the 95% confidence interval for r_c ; CI_U = upper bound of 95% confidence interval for r_c ; %Var = variance attributable to statistical artifacts; CV_L = lower bound of the 80% credibility interval for r_c ; CV_U = upper bound of the 80% credibility interval for r_c .

5.4.1 | Health

We find a moderate and positive correlation between thriving at work and subjective health ($r_c = .39$) and a strong and negative correlation for the relationship between thriving and burnout ($r_c = -.53$). Hypotheses 18 and 19, therefore, were supported.

5.4.2 | Job attitudes

We find strong, positive correlations between thriving and job satisfaction ($r_c = .64$), commitment ($r_c = .65$), and positive attitudes toward self-development ($r_c = .52$). Turnover intention correlates weakly and negatively with thriving at work ($r_c = -.29$). These findings support Hypotheses 20 through 23.

5.4.3 | Performance-related outcomes

Task performance has a moderate and positive relationship with thriving ($r_c = .35$), as well as with both learning ($r_c = .31$) and vitality ($r_c = .32$). Organizational citizenship behavior correlates moderately and positively ($r_c = .43$), whereas creative performance correlates strongly and positively with thriving at work ($r_c = .58$). Thus, Hypotheses 24 through 26 were also supported.

5.5 | Exploratory analyses

5.5.1 | Demographic variables

Results of the correlations between thriving at work and demographic variables are presented in Table 4. Although age is unrelated to both thriving and learning, we find a weak and positive relationship between age and vitality ($r_c = .19$). Gender and tenure are unrelated to thriving, and tenure is also unrelated to vitality and learning. We find weak and positive relationships between education and thriving ($r_c = .05$) and between position and thriving ($r_c = .16$). Finally, hours worked are unrelated to thriving.

5.5.2 | Moderators

We considered a number of moderators of the relationships between thriving at work and its antecedents and outcomes as exploratory analyses. To ensure adequate coverage of moderator categories (see Borenstein, Hedges, Higgins, & Rothstein, 2011), we considered these analyses only for constructs represented in at least $k = 10$ cases in our focal analyses. Two constructs met this minimum cutoff and were considered further in these analyses (i.e., psychological capital, $k = 13$, and task performance, $k = 15$). We considered four categorical moderators (i.e., publication status: "published" vs. "unpublished"; thriving scale: "Porath" vs. "other"; sample type: "blue collar" vs. "white collar" vs. "mixed" vs. "students"; and sample composition: "single organization" vs. "multiple organizations"); we enumerated categorical moderators when there were at least $k = 2$ studies representing any given level, as described (for some cases, it was not possible to conduct these models, as there were instances of $k = 1$ or $k = 0$ for certain outcome-moderator combinations). We also considered two continuous moderators (i.e., the percentage of each sample that was female, % female, and average sample age) for each of these two outcomes. Separate meta-regression models for each outcome-moderator combination were specified using "metafor" (Viechtbauer, 2010). To mirror our focal analyses, we used Hunter-Schmidt random-effects estimators and sample size weighting in these models. Moreover, we used uncorrected correlations as our outcomes in these models, making these "bare bones" analyses (Schmidt & Hunter, 2015).

For the sake of space, a summary of all meta-regression models can be found in our online appendix (<https://osf.io/kh3qy/>). Across each of the models considered, only one statistically significant moderator was observed. Specifically, study-level average age was found to moderate the strength of the thriving-task performance relationship (see Table 5). Corroborating our focal analyses, the intercept of this model is positive ($B_0 = .183$), suggesting that the relationship between thriving and task performance is positive. Qualifying this observation, however, the slope for study-level average age ($B_{age} = .003$) is likewise positive, suggesting that the strength of the

TABLE 4 Summary of meta-analytic relationships: Demographic variables

Demographic variable	Thriving dimension	K	N	r	r_c	SD_{r_c}	CI _L	CI _U	%Var	CV _L	CV _U
Age	Overall thriving	38	9,832	.03	.03	0.07	-.00	.06	47.06	-.06	.12
	Vitality	4	615	.17	.19	0.00	.11	.27	100.0	—	—
	Learning	4	615	.01	.01	0.00	-.05	.07	100.0	—	—
Gender	Overall thriving	28	8,158	.02	.02	0.07	-.01	.06	47.51	-.06	.11
Tenure	Overall thriving	37	10,213	.03	.03	0.09	-.09	.15	31.77	-.01	.07
	Vitality	8	1,402	.06	.07	0.12	-.01	.07	37.90	-.09	.15
	Learning	8	1,402	.03	.04	0.00	-.01	.09	100.0	—	—
Education	Overall thriving	22	6,344	.05	.05	0.07	.01	.09	43.99	-.04	.14
Position	Overall thriving	8	1,884	.14	.16	0.13	.05	.26	21.53	-.01	.32
Hours worked	Overall thriving	3	893	.05	.06	0.02	-.02	.13	90.79	.03	.08

Note. K = cumulative number of studies; N = cumulative sample size; r = sample size-weighted correlation; r_c = sample size-weighted and reliability-corrected correlation; SD_{r_c} = standard deviation of r_c ; CI_L = lower bound of the 95% confidence interval for r_c ; CI_U = upper bound of 95% confidence interval for r_c ; %Var = variance attributable to statistical artifacts; CV_L = lower bound of the 80% credibility interval for r_c ; CV_U = upper bound of the 80% credibility interval for r_c .

TABLE 5 Summary of meta-regression model study age moderates the thriving–task performance relationship

Predictor	Estimate (B)	SE	Z	p	CI _L	CI _U
Intercept	.183	0.052	3.512	<.001	.081	.285
Mean age	.003	0.001	2.425	.015	.001	.005

Note. $K = 12$, $N = 4,203$. $Q_E(df = 10) = 8.011$, $p = .628$, $I^2 = 0.00\%$. CI_L = lower bound of the 95% confidence interval for the estimate; CI_U = upper bound of the 95% confidence interval for the estimate.

positive thriving–task performance increases as a function of age. This effect is graphically illustrated in Figure 3.

5.5.3 | Meta-analytic regression models and path analysis

Beyond exploratory tests of study-level moderators, we additionally specified four meta-analytic regression models to explore the incremental predictive ability of thriving at work over and above positive affect and work engagement for four common outcomes: task performance, job satisfaction, subjective health, and burnout. Although these outcomes are important to employees and organizations, only health is a key outcome in Spreitzer et al.'s (2005) model. A summary of these models can be found in Table 6. Compared with other constructs in our conceptual model, the interrelationships between positive affect, work engagement, task performance, job satisfaction, subjective health, and burnout have been studied meta-analytically (Alarcon, Eschleman, & Bowling, 2009; Christian, Garza, & Slaughter, 2011; Cole, Walter, Bedeian, & O'Boyle, 2012; Connolly & Viswesvaran, 2000; Faragher, Cass, & Cooper, 2005; Ford, Cerasoli, Higgins, & Decesare, 2011; Halbesleben, 2010; Judge & Bono, 2001; Kaplan, Chen, & Manuck, 2009; Swider & Zimmerman, 2010). We compiled meta-analytic correlations from these sources and, for the association

between positive affect and subjective health, through an ancillary MetaBus analysis (Bosco, Steel, Oswald, Uggerslev, & Field, 2015). We conducted hierarchical ordinary least squares regression models for task performance, job satisfaction, subjective health, and burnout separately. In each model, we first regressed the outcome onto positive affect and work engagement in step one and then added thriving at work in step two. For both outcomes, we noted changes in variance explained, ΔR^2 , associated with the addition of thriving at work as a predictor. As suggested by Viswesvaran and Ones (1995), the sample size for each regression model was the harmonic mean of the sample size across the relevant correlations considered.

To further understand the unique predictive role of thriving in these models, we conducted relative weights analyses (see Johnson, 2000) on the step two models. The relative contribution of correlated predictors to the model R^2 cannot be determined solely by examining the partial regression weights (Lebreton, Ployhart, & Ladd, 2004). Accordingly, relative weights analysis calculates both raw and rescaled relative weights. Raw relative weights reflect the proportion of variance explained in an outcome that is attributed to each of the predictors, whereas the rescaled variant reflects the percentage of explained variance that is accounted for by each predictor variable. This is calculated by simply dividing the raw relative weights by the observed model R^2 (see Lebreton, Hargis, Griepentrog, Oswald, & Ployhart, 2007).

The results of these models suggest that thriving exhibits incremental predictive validity above and beyond positive affect and work engagement, for task performance, job satisfaction, subjective health, and burnout, accounting for between 1% (task performance) and 11% (job satisfaction) additional variance in these outcomes. Moreover, the relative weights analyses suggest that thriving accounts for relatively more of the total variance explained in job satisfaction (i.e., 53.46% of $R^2 = .39$), subjective health (i.e., 62.00% of $R^2 = .14$), and burnout (i.e., 49.02% of $R^2 = .26$) than in task performance (i.e., 40.16% of $R^2 = .14$), for which the dominant predictor was work engagement.

In addition to these individual multiple regression models, we also modeled each of these outcomes simultaneously in a larger path model. A full meta-analytic correlation matrix for this model can be found in Table 7. As the parameter estimates are nearly identical to those reported for the regression models presented above, we represent the full results of this model in our online appendix (<https://osf.io/kh3qy/>). Moreover, because of the multivariate nature of this path model, we derived multivariate relative weights using formulae presented by Lebreton and Tonidandel (2008) to parse an estimate of the composite R^2 across all four outcome variables considered here (i.e., P^2 , which is derived as the sum of the squared canonical correlations). Here, $P^2 = .145$, suggesting that 14.5% of the variance is explained when construing these four outcomes as a multivariate composite. Mirroring the general pattern observed in the individual regression results, positive affect accounted for 20.47% ($RW_{Raw} = 0.030$), work engagement for 31.741% ($RW_{Raw} = 0.046$), and thriving for 47.79% of this explained variance ($RW_{Raw} = 0.069$).

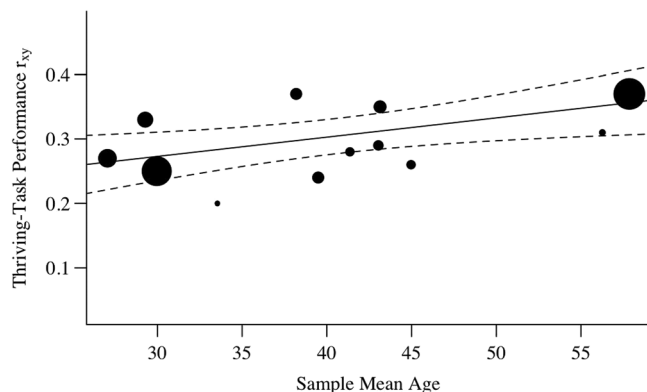


FIGURE 3 Age as a moderator of the thriving–task performance relationship. The solid line represents the estimate of the linear relationship (B) between sample mean age and the correlation between thriving and task performance (see Table 5). The dashed lines represent the 95% confidence interval around this estimate. Individual points represent the observed correlation in each study, scaled in terms of their sample size (n)

TABLE 6 Summary of multiple regression models

Dependent variable: Task performance, $F = 157.378$ ($p < .001$), $R^2 = .141$, $F_{\text{partial}} = 34.689$ ($p < .001$), $\Delta R^2 = .010$						
Predictor	B	SE_B	t value	p	Raw RW	RS RW
Positive affect	-.005	0.020	-0.255	.799	0.009	6.294%
Work engagement	.291	0.021	13.845	<.001	0.089	63.550%
Thriving	.128	0.022	5.889	<.001	0.042	30.155%
Dependent variable: Job satisfaction, $F = 606.829$ ($p < .001$), $R^2 = .389$, $F_{\text{partial}} = 517.410$ ($p < .001$), $\Delta R^2 = .110$						
Predictor	B	SE_B	t value	p	Raw RW	RS RW
Positive affect	.160	0.017	9.668	<.001	0.080	20.687%
Work engagement	.169	0.018	9.495	<.001	0.100	25.855%
Thriving	.420	0.018	22.743	<.001	0.208	53.458%
Dependent variable: Subjective health, $F = 96.379$ ($p < .001$), $R^2 = .141$, $F_{\text{partial}} = 517.410$ ($p < .001$), $\Delta R^2 = .063$						
Predictor	B	SE_B	t value	p	Raw RW	RS RW
Positive affect	.151	0.025	6.045	<.001	0.043	30.163%
Work engagement	-.061	0.027	-2.254	.024	0.011	7.836%
Thriving	.316	0.028	11.319	<.001	0.087	62.001%
Dependent variable: Burnout, $F = 379.775$ ($p < .001$), $R^2 = .263$, $F_{\text{partial}} = 272.301$ ($p < .001$), $\Delta R^2 = .063$						
Predictor	B	SE_B	t value	p	Raw RW	RS RW
Positive affect	-.165	0.017	-9.604	<.001	0.066	24.999%
Work engagement	-.144	0.018	-7.780	<.001	0.068	25.977%
Thriving	-.317	0.019	-16.499	<.001	0.129	49.024%

Note. B = regression weight; SE_B = standard error of B ; RW = relative weight; RS = rescaled.

5.6 | Sensitivity analysis

5.6.1 | Publication bias

Beyond exploratory analyses, we also ran sensitivity analyses to address publication bias. More specifically, we considered cumulative meta-analysis to address whether studies with lower precision cause “drift” in our meta-analytic estimates (see Banks, Kepes, & McDaniel, 2012, for additional details). To ensure enough studies to support these tests, we again considered these analyses only for constructs represented in at least $k = 10$ cases in our focal analyses (i.e., psychological capital, $k = 13$, and task performance, $k = 15$). Complete descriptions of these methods and the results of these analyses are presented in our online appendix (<https://osf.io/kh3qy/>). In summary, we found no substantive evidence that publication bias is unduly affecting our conclusions.

5.6.2 | Construct similarity

Although we made distinct hypotheses about the unique relationships between incivility and civility, and heedful relating and coworker support, we also recognize that there is, to some degree, at least conceptual overlap between these two groups of constructs. To address the extent of this overlap, we also considered exploratory models where we combined incivility and civility (reverse coded) and heedful relating and coworker support. Results showed that the combined constructs

are significantly associated with thriving at work. Specifically, the combined civility and incivility construct is moderately and negatively related to thriving at work, and the combined heedful relating and coworker support construct is moderately and positively related to thriving at work. Full results of these models are available in our online appendix (<https://osf.io/kh3qy/>).

A note of caution about these models bears some attention here. Specifically, Schmidt and Hunter (2015) offer that there is notable heterogeneity in meta-analytic estimates when the percentage of variance accounted for by statistical artifacts (%Var) is <75%. In our zero-order analysis, the observed %Var for incivility and civility and for supportive coworker behavior each exceeds this 75% threshold, suggesting that after accounting for sampling and measurement error, there is substantial homogeneity in these estimates. As such, the parameters for these “combined” models should be interpreted with caution and in light of the observation that combining these variables into single analyses is likely artificially inflating the heterogeneity of these otherwise homogeneous estimates.

6 | DISCUSSION

6.1 | Summary and interpretation of findings

Based on Spreitzer et al.'s (2005) model, the primary goal of our meta-analysis was to achieve a better understanding of the nomological network of thriving at work by examining relationships between thriving

TABLE 7 Meta-analytic correlation table

1.	2.	3.	4.	5.	6.	7.
1. Positive affect	1.00					
2. Job satisfaction	K = 15, N = 3,326, $r_{xy} = .41$ (Connolly & Viswesvaran, 2000)	1.00				
3. Task performance	K = 16, N = 3,084, $r_{xy} = .16$ (Kaplan et al., 2009)	K = 312, N = 54,471, $r_{xy} = .18$ (Judge & Bono, 2001)	1.00			
4. Work engagement	K = 14, N = 6,715, $r_{xy} = .37$ (Christian et al., 2011)	K = 20, N = 9,725, $r_{xy} = .46$ (Christian et al., 2011)	K = 14, N = 4,562, $r_{xy} = .36$ (Christian et al., 2011)	1.00		
5. Burnout	K = 13, N = 3,327, $r_{xy} = -.36$ (Alarcon et al., 2009)	K = 62, N = 19,944, $r_{xy} = -.41$ (Faragher et al., 2005)	K = 24, N = 5,558, $r_{xy} = -.15$ (Swider & Zimmerman, 2010)	K = 32, N = 22,096, $r_{xy} = -.38$ (Halbesleben, 2010)	1.00	
6. Subjective health	K = 16, N = 9,558, $r_{xy} = .27$ (ancillary MetaBus meta-analysis)	K = 119, N = 58,762, $r_{xy} = .24$ (Faragher et al., 2005)	K = 5, N = 2,816, $r_{xy} = .12$ (Ford et al., 2011)	K = 17, N = 11,593, $r_{xy} = .17$ (Halbesleben, 2010)	K = 5, N = 5,004, $r_{xy} = -.29$ (Cole et al., 2012)	1.00
7. Thriving	K = 5, N = 1,555, $r_{xy} = .45$ (current meta-analysis)	K = 7, N = 2,798, $r_{xy} = .58$ (current meta-analysis)	K = 15, N = 4,894, $r_{xy} = .29$ (current meta-analysis)	K = 8, N = 1,854, $r_{xy} = .55$ (current meta-analysis)	K = 6, N = 1,951, $r_{xy} = -.47$ (current meta-analysis)	K = 3, N = 532, $r_{xy} = .35$ (current meta-analysis)

Note. K = number of independent studies; N = total sample size; r_{xy} = sample size-weighted correlation coefficient.

and its relevant antecedents and outcomes. Each of our hypotheses was supported by the meta-analytic findings. Individual characteristics, including psychological capital, core self-evaluations, proactive personality, and positive affect, were positively associated with thriving, whereas negative affect and perceived stress were negatively associated with thriving. Psychological capital was also positively related to both subdimensions of the thriving construct, vitality and learning.

We found moderate and strong relationships between thriving and employees' individual characteristics. The strong association between thriving and work engagement ($r_c = .64$) is striking and may raise concerns about the divergent validity of thriving at work. Indeed, thriving and work engagement seem to have a lot in common. Both are defined as work-related, positive, affective-motivational states (Bakker et al., 2008; Spreitzer et al., 2005). Moreover, vitality also is one of the three dimensions of work engagement measured by the UWES (Schaufeli et al., 2006; Schaufeli, Bakker, & Salanova, 2016). However, there are three arguments for the distinctiveness of thriving and work engagement. First, thriving is unique in its combination of vitality with a sense of learning at work. Second, the upper bounds of both the 95% confidence interval ($CI_U = .74$) and 80% credibility interval ($CV_U = .80$) of the association between thriving and work engagement do not include 1.00, suggesting some degree of divergence. Finally, our meta-analytic regression models revealed that thriving exhibited incremental predictive validity above and beyond work engagement and positive affect, for task performance, job satisfaction, subjective health, and burnout. However, the proportion of additional variance explained by thriving in these models was quite small. Similarly, our zero-order analysis suggests that thriving and positive affect are moderately related. Some researchers consider vitality as a part of the positive affect construct (e.g., Nix et al., 1999). However, the moderate relation between thriving and positive affect as well as the results of the meta-analytic regression models suggest that thriving can be distinguished from positive affect.

Spreitzer et al. (2005) defined thriving as a socially embedded phenomenon, suggesting positive links with favorable relational characteristics at work. Consistently, we found predominantly moderate and strong relationships between thriving and coworker-related characteristics. In this regard, it was striking that workplace incivility related only weakly negatively to thriving at work. It has long been recognized that there is a "positive manifold" among similar constructs in psychological research, possibly explaining the somewhat weaker relationships between thriving and negatively framed constructs (Spearman, 1904). At the same time, the negative association between workplace incivility and thriving could be interpreted as inconsistent with Spreitzer et al.'s (2005) statement that "thriving can occur with or without adversity" (p. 538). Specifically, this statement might be understood as suggesting a zero relationship between negative events and thriving. Contrarily, our findings clearly demonstrate that thriving at work is positively associated with favorable work-related events and experiences and negatively associated with unfavorable work-related events and experiences. Whereas leadership behaviors such as supportive leadership and empowering leadership correlated

moderately with thriving, transformational leadership was only weakly associated with thriving. It may be that the somewhat weaker effect of transformational leadership is due to the dependencies that transformational leaders create (Kark, Shamir, & Chen, 2003), whereas empowering leaders support their followers' autonomy (e.g., Amundsen & Martinsen, 2014). LMX and perceived organizational support were strongly associated with thriving at work. Consistent with social exchange theory (Cropanzano & Mitchell, 2005), employees may show thriving as a reaction to perceived support from their supervisor and organization.

Thriving at work correlated moderately or strongly with all outcome variables except for turnover intentions for which a weak and negative relationship was found. In their model, Spreitzer et al. (2005) considered health and development as key outcomes of thriving at work. Indeed, we found positive relationships between thriving and both health-related constructs (i.e., subjective health and burnout) and positive attitudes toward self-development. Furthermore, both job satisfaction and commitment were strongly associated with thriving at work, supporting their inclusion in the conceptual model of thriving at work. The only negative job attitude, turnover intentions, related weakly to thriving at work. Thriving is a pleasurable psychological state (Porath et al., 2012; Spreitzer et al., 2005). Research has consistently found that positive states facilitate creative problem solving (e.g., Fredrickson, 2001; Fredrickson & Branigan, 2005; Isen, 1999). For instance, Isen (1999) concluded that the facilitative effect of positive feelings is specific to creativity and does not extend to routine tasks. Thus, it may not be surprising that the link between thriving and creative performance was the strongest among all performance outcomes.

Demographic variables were either unrelated or related weakly to thriving at work or its dimensions vitality and learning. Age was unrelated to both thriving and learning but related positively to vitality. Interestingly, our additional exploratory analyses show that study-level mean age moderated the association between thriving and task performance, such that the association was stronger among older as compared with younger employees. These findings might be explained by research showing the importance of intrinsic (as compared with extrinsic) motives among older employees (Kooij, de Lange, Jansen, Kanfer, & Dijkers, 2011). In addition, we found a positive relationship between education and thriving at work. This might suggest that higher levels of education facilitate the accumulation of job-related knowledge and skills (Becker, 1975), which, in turn, enhance the experience of thriving at work. Similarly, position was positively related to thriving at work. Employees in higher positions might have more resources to acquire knowledge and to fully engage in their work, subsequently leading to higher levels of thriving at work.

6.2 | Theoretical implications

The results of our meta-analysis raise several theoretical questions about the nature of the thriving at work construct and its proposed dimensions. Consistent with Spreitzer et al.'s (2005) conceptualization, most research has used the scale developed by Porath et al. (2012),

which captures learning as a momentary sense of learning at work. Alternative measures have assessed the learning dimension in terms of learning (or mastery) goal orientation, a more stable and trait-like construct (e.g., Rozkwitalska & Basinska, 2016). However, some researchers have suggested that mastery goal orientation (e.g., aiming to learn new skills) and performance goal orientation (e.g., aiming to attain a promotion) may not be easily distinguished both conceptually and empirically (DeShon & Gillespie, 2005). This raises questions about the most appropriate conceptualization and operationalization of the learning dimension of thriving in future research. Indeed, learning as mastery goal orientation captures only part of the “subjective learning” domain and neglects other potentially relevant dimensions, such as personal growth, flourishing, and self-actualization (e.g., Keyes, Shmotkin, & Ryff, 2002). Our moderator analyses did not reveal an impact of the type of scale on the relationships between thriving and its correlates. Yet the number of studies using alternative measures was relatively small ($k = 6$). Thus, it remains unclear whether thriving is better characterized by a joint sense of vitality and a momentary sense of learning or a more stable learning goal orientation. Further theorizing on the nature of the learning dimension of thriving at work is needed to move research in this area forward.

A related issue concerns the theoretical foundation of the latent thriving construct. Spreitzer et al. (2005) refer to self-determination theory to explain that vitality reflects the hedonic and learning reflects the eudaimonic perspective of psychological well-being. Within this theoretical framework, learning is defined as an aspect of personal growth (Ryan, Huta, & Deci, 2008). Researchers have argued that eudaimonic well-being leads to feelings of vitality (Ryan & Deci, 2000b; Ryan & Deci, 2001; Ryan et al., 2008). Indeed, self-determination theory would suggest that learning and vitality operate at different levels and that learning leads to vitality. Given these assumptions, it is not surprising that our meta-analysis found a strong relationship between learning and vitality ($r_c = .65$); however, we are not able to disentangle causal effects with our meta-analytic data.

We also found evidence for the validity of an extended conceptual model of thriving at work. In addition to relational characteristics, our findings provide support for the inclusion of additional individual characteristics (e.g., psychological capital) as antecedents of thriving. Several individual characteristics we examined were not included in the initial model by Spreitzer et al. (2005) but are frequently examined in empirical studies. Moreover, next to health-related outcomes, we showed that thriving is also associated with both performance-related (e.g., task and creative performance) and attitudinal (e.g., job satisfaction and commitment) outcomes. In summary, our findings suggest extending the theoretical model of thriving at work (Spreitzer et al., 2005) consistent with our meta-analytic results.

6.3 | Limitations and future research

We need to acknowledge a number of limitations of this study. First, we could only include variables in our meta-analysis that have been

considered in past empirical research. Although we were not able to include all of the preregistered antecedents as separate constructs (e.g., emotional stability), we were able to capture many if not most of the variables included in Spreitzer et al.'s (2005) model.

Second, most studies included in our meta-analysis used cross-sectional research designs with self-reports to measure thriving at work, antecedents, and outcomes variables, which can potentially lead to common method bias. Whereas thriving is an inherently subjective construct, future studies should include more objective measures, such as peer or supervisor ratings of work outcomes. We also cannot draw any conclusions about causality using our meta-analytic data. Although we propose, based on Spreitzer et al.'s (2005) model, that individual and relational characteristics are primarily antecedents of thriving whereas health, job attitudes, and performance are outcomes of thriving, it may be possible that reverse and reciprocal effects exist. For example, work engagement has been posited both as an antecedent (e.g., Milosevic et al., 2014) and as an outcome of thriving at work (e.g., Abid et al., 2018) in the extant literature. Only three of the studies included in the current meta-analysis assessed thriving at two measurement points (Jiang, Hu, Wang, & Jiang, 2019; Niessen et al., 2017; Porath et al., 2012). To better understand the causal direction of effects, researchers should conduct intervention studies and use longitudinal research designs.

Third, due to a limited number of studies that reported results for vitality and learning separately, our meta-analytic findings do not allow definite conclusions about the role of thriving dimensions. Future research on thriving at work should always report both overall and dimension scores.

Our findings highlight several opportunities and needs for future research. To begin with, researchers could investigate the most appropriate ways of operationalizing thriving at work. In particular, future studies could compare the validity of different measures of thriving. This includes comparisons of the operationalization of the learning dimension in terms of a momentary sense of learning versus learning goal orientation. Moreover, alternative operationalizations of thriving at work should be examined. In all of the studies included in the current meta-analysis, scores on the vitality and learning items were averaged or summed to form an overall thriving score. This approach implies that an employee who scores high on vitality and low on learning obtains a similar overall thriving score as an employee who experiences medium levels of both vitality and learning. Because thriving at work is explicitly defined as the *joint* sense of vitality and learning, future research should investigate how different combinations of vitality and learning relate to antecedents and outcomes of thriving at work. For example, polynomial regression with response surface analysis (see Edwards & Parry, 1993; Shanock, Baran, Gentry, Pattison, & Heggstad, 2010) could be applied to examine whether the strength of the relationship between thriving and its outcomes changes as a function of the agreement or disagreement between vitality and learning. This approach could also serve to highlight the distinction between thriving and other constructs related to vitality (e.g., intrinsic motivation, positive affect, work engagement, and subjective health) or learning (e.g., self-actualization and eudaimonic well-being)—after

all, it is the *joint* sense of vitality and learning that makes thriving at work a unique construct.

Another opportunity for future research is to examine thriving at different conceptual and analytic levels. In most studies we identified, relationships between thriving and other variables were examined at the individual employee level. However, because thriving at work is a socially embedded phenomenon (Spreitzer et al., 2005), it may also emerge as a shared property at the team or work unit level. Indeed, some researchers have reported beneficial effects of thriving at the collective level for both individual well-being outcomes as well as team performance (e.g., Keister, 2013; Walumbwa et al., 2018). For example, Walumbwa et al. (2018) found that servant leadership and core self-evaluations positively related to thriving at the work unit level. Moreover, work unit level thriving was positively associated with collective affective commitment, which, in turn, positively related to overall work unit performance. Altogether, future research should examine the relationships between thriving and its antecedents and outcomes at individual, team, and organizational levels.

Ultimately, more research is needed on thriving across different time intervals, including intraindividual variation over short durations and change across longer term periods. Such research could address the question whether thriving reflects a work-related psychological state or should be captured as a trait, meaning that some people are inherently more or less predisposed to thrive at work. Findings from a diary study indicate that, at the within-person level, thriving varies from day to day (Niessen et al., 2012). Interestingly, variation was weaker for learning compared with vitality, suggesting that learning depends more on stable job characteristics and people's general willingness to learn (Niessen et al., 2012). In addition, more longitudinal studies are needed to examine the causal paths between antecedents, outcomes, and thriving at work proposed in the conceptual model of the current meta-analysis.

6.4 | Practical implications and conclusion

Our meta-analytic findings also have a number of implications for organizational practitioners. We found thriving at work to be positively related to various important work outcomes, including employee health, favorable job attitudes, and performance-related outcomes. Consequently, practitioners should aim at establishing working conditions that foster thriving at work. Our meta-analytic findings regarding antecedent variables of thriving at work thus should be particularly interesting for practitioners. Specifically, positive relationships with coworkers, supervisors, and the organization as a whole seem to enhance the experience of thriving at work. Among all antecedents, the strongest relations were found for the relationships of thriving with LMX and perceived organizational support. Thus, practitioners are well advised to take steps to enhance these relational resources.

In conclusion, our findings on antecedents and outcomes of thriving at work are largely consistent with and may be used to further expand Spreitzer et al.'s (2005) model. The results underscore the

importance of the experience of thriving in the work context in three ways. First, we showed that thriving at work is associated with several individual and relational characteristics. Second, thriving at work is related to important work outcomes, including health-related outcomes, attitudinal outcomes, and performance-related outcomes. Finally, the results of relative weights analyses suggest that thriving exhibits incremental predictive ability above and beyond positive affect and work engagement, for task performance, job satisfaction, subjective health, and burnout.

ORCID

Anne-Kathrin Kleine  <https://orcid.org/0000-0003-1919-2834>

Cort W. Rudolph  <https://orcid.org/0000-0002-0536-9638>

Hannes Zacher  <https://orcid.org/0000-0001-6336-2947>

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AUTHOR BIOGRAPHIES

Anne-Kathrin Kleine is a PhD student at the Department of Psychology at the University of Groningen. She received her master's degree at Leipzig University. Her research interests include positive organizational psychology, proactive work behavior, and social identity. Moreover, she did research on psychosocial interventions for cancer patients and their partners.

Cort W. Rudolph is an Associate Professor of Industrial and Organizational Psychology at Saint Louis University. His research focuses on a variety of issues related to the aging workforce, including the application of lifespan development perspectives, well-being and work-longevity, and ageism.

Hannes Zacher is a Professor of Work and Organizational Psychology at the Institute of Psychology at Leipzig University. In his research program, he investigates aging at work, career development, and occupational well-being; proactivity, innovation, leadership, and entrepreneurship; and pro-environmental employee behavior.

How to cite this article: Kleine A-K, Rudolph CW, Zacher H. Thriving at work: A meta-analysis. *J Organ Behav*. 2019;1–27. <https://doi.org/10.1002/job.2375>